

[0053] FIG. 37 is an enlarged front view of the portable wireless telephone set in the close state.

[0054] FIG. 38 is a diagram showing a portable terminal device according to the present invention with FIG. 39, and is a perspective view in an open state.

[0055] FIG. 39 is a perspective view showing a close state.

[0056] FIG. 40 is an illustration to show problems in the use of a conventional portable wireless telephone set with FIG. 41, and is an illustration showing the state where the first housing has gotten apart from user's ear.

[0057] FIG. 41 is an illustration to show the state where the second housing has gotten apart from user's mouth.

[0058] FIG. 42 is a diagram showing another conventional portable wireless telephone set with FIG. 43, and is a perspective view showing an open state.

[0059] FIG. 43 is a perspective view showing a close state.

[0060] FIG. 44 is a conceptual view showing one of conventional problems.

BEST MODE FOR CARRYING OUT THE INVENTION

[0061] An embodiment of the present invention will be described in detail with reference to the accompanying drawings. Note that, each embodiment shown in below is that the present invention has been applied to a portable wireless telephone set.

[0062] First, the concept of the present invention will be described (see FIGS. 1 and 2).

[0063] A portable wireless telephone set 1 is formed by that a first housing 2 and a second housing 3 are connected via a hinge shaft 4 turnably to the shaftwise direction. In the first housing 2, at one end part of one surface 2a, a positional locating concave part 6 is formed, and at the other end part of one surface 2a, a microphone part 5 is provided. At the other end part of one surface 3a of the second housing 3, a speaker part 7 is provided.

[0064] In the first housing 2 and the second housing 3, the respective one end parts are connected via the hinge shaft 4, and the said hinge shaft 4 is designed to be always tilted to the first housing 2.

[0065] When communication is not performed with the portable wireless telephone set 1, one surface 2a of the first housing 2 is covered with the second housing 3, and the portable wireless telephone set 1 is in a close state (see FIG. 2). In the close state, in the second housing 3, the other surface 3b that is the opposite surface to one surface 3a contacts with or is closing to one surface 2a of the first housing 2.

[0066] When communication is performed with the portable wireless telephone set 1, the first housing 2 or the second housing 3 is turned to the second housing 3 or the first housing 2 to the shaftwise direction of the hinge shaft 4, and the portable wireless telephone set 1 is opened (see FIG. 1). The second housing 3 is designed to be tiltable to the hinge shaft 4, so that in the open state, one end part of

the second housing 3 is located on the locating concave part 6 of the first housing 2: the second housing 3 is tilted to the first housing 2.

[0067] Therefore, in the open state, a first connection line L1 connecting the microphone part 5 of the first housing 2 with the hinge shaft 4 will be set to a predetermined angle θ less than 180° to a second connection line L2 connecting the speaker part 7 of the second housing 3 with the hinge shaft 4 (see FIG. 1).

[0068] In this manner, in the open state, by tilting the second housing 3 to the first housing 2 at the specified angle, the portable wireless telephone set 1 becomes the shape along the outline of the caller's face when the caller performs communication, and it can get the microphone part 5 close to the caller's mouth and can get the speaker part 7 close to the caller's ear: the usability in communication can be improved.

[0069] Moreover, it is unnecessary that the part having the microphone part 5 in the first housing 2 or the part having the speaker part 7 in the second housing 3 is projected, and in the close state, one surface 2a of the first housing 2 contacts with or is closing to the other surface 3b of the second housing 3: the miniaturization of the portable wireless telephone set 1 can be achieved.

[0070] Next, each suitable embodiment according to the present invention will be described.

[0071] A first embodiment will be described (see FIGS. 3 to 24).

[0072] A portable wireless telephone set 10 is formed by that in the state where one end part of a first housing 11 and one end part of a second housing 12 are overlapped in the shaft direction of a hinge shaft 13, the first housing 11 and the second housing 12 are mutually turnably connected via the said hinge shaft 13 (see FIGS. 3 to 7).

[0073] At one end part of one surface 11a, a shallow concave part 15 in an almost spherical form is formed, and at the other end part on one surface 11a of the first housing 11, a microphone part 14 is provided. On one surface 11a of the first housing 11, operation keys 16s are regularly arranged, and a main operating part 17 is formed by the said operation keys 16s.

[0074] On one surface 11a of the first housing 11, projections 18s are provided at mutually separated positions.

[0075] One end part of the first housing 11 is formed as a slope 11c so that as a position gets apart from the microphone part 14, one surface 11a gets apart from the other surface 11b being the opposite surface to one surface 11a (see FIGS. 6 to 9). The said concave part 15 is formed on the slope 11c.

[0076] On the slope 11c of the first housing 11, a supporting hole 19 is formed (see FIG. 9).

[0077] On the other end part on one surface 12a of the second housing 12, a speaker part 20 is provided (see FIGS. 3 to 7, and 11). At one end part of one surface 12a of the second housing 12, keys 21s are arranged, and a suboperating part 22 is formed by the said keys 21s. On one surface 12a of the second housing 12, a display part 23 being a liquid crystal display is provided between the speaker part 20 and the suboperating part 22.